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SPECIFICATION FOR PITCH-BOUND WIRE REEDS FOR JUTE LOOMS

(Second Revision)

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SPECIFICATION FOR PITCH-BOUND WIRE REEDS FOR JUTE LOOMS

(Second Revision)

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Indian Standard

SPECIFICATION FOR PITCH-BOUND WIRE REEDS FOR JUTE LOOMS

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 10 January 1978, after the draft finalized by the Healds and Reeds Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was originally published in 1960 and revised in 1968. In the present revision, for requirements of reed wire, reference has been drawn to the appropriate Indian Standard.

0.3 Appendix A is a ready reference for converting porter into metric count.

0.4 To familiarize the industry with International System of Units (SI Units) the basic SI Units as well as the recommended SI Units for use in the textile industry are given in Appendix B.

0.4.1 Standards of weights and Measures Act 1976 also stipulates use of SI Units.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers dimensions and other requirements of pitch-bound reeds used in the jute industry.

2. NOMENCLATURE

2.1 The shape and the names of various components of pitch-bound wire reeds are given in Fig. 1.

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*Rules for rounding off numerical values (*revised*).

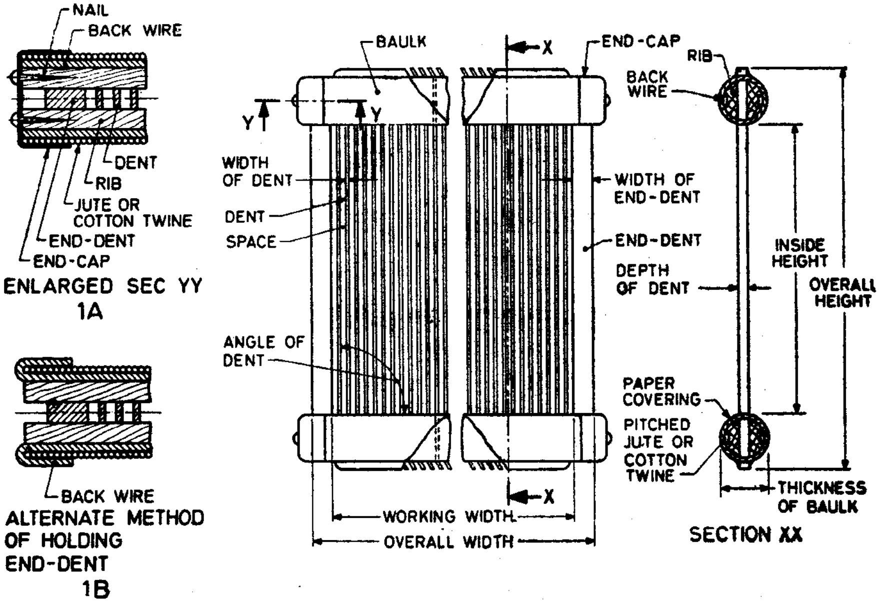

Fig. 1 Nomenclature

3. MATERIALS

3.1 Dents — The reed wire used for making dents shall conform to IS : 8566-1977*.

3.2 The ribs should be made from well-seasoned timber of suitable species (*see also* IS : 1141-1973†).

3.3 The cotton or jute twine used should be uniformly bitumanized and shall be free from knots.

3.4 The recommended size of back wire used for reinforcing baulks is 3·25 × 1·00 mm.

4. WORKMANSHIP

4.1 The pitch or coal tar used in twine shall not have trickled down from one baulk towards the other and it shall also not have permeated the paper covering.

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*Specification for steel wire for reeds.

†Code of practice for seasoning timber (*first revision*).

4.2 The dents shall be rust free, shall have rounded edges, and shall be finished smooth.

5. DIMENSIONS

5.1 The principal dimensions of the pitch-bound wire reed for jute looms shall be as given in Table 1.

TABLE 1 PRINCIPAL DIMENSIONS

CHARACTERISTIC	REQUIREMENT		TOLERANCE
	For Narrow Looms	For Broad Looms	
(1)	(2)	(3)	(4)
Overall width, mm	←—— As agreed ——→		±5
Overall height, mm	140	165	±3
Working (inside) height, mm	←—— As agreed ——→		±2
Depth of dent, mm	3·25	6·00	±0·05 (within a reed and ±0·10 between the reeds)
Thickness of baulk, mm	16·0	17·5	±1·5
Angle of dent	←—— 90° ——→		±2°

5.2 Dent Width — The count-wise width of dent shall be as follows:

Count of Reed	*Width of*		
	Dent mm		*End Dent* mm
For Narrow Looms:			
Up to and including 12	2·00	±0·05 within a reed *and* ±0·10 between reeds	5·75 ± 1·00
Above 12 up to and including 17	1·60		
Above 17 up to and including 19	1·40		
Above 19 up to and including 32	1·20		
For Broad Looms:			
Up to and including 35	1·00		
Above 35	0·70		

5.3 Count of Reed — The count of reed shall be as specified in the contract or order (or as declared on the reed) subject to a tolerance of ± 0·064 metric count.

5.3.1 The metric count shall be determined by:

a) Counting the number of units (each consisting of one dent and one air space) per decimetre (100 mm) at 5 different places on the reed and taking its average.

(Porter of reed = Metric count/2·13)

or

b) Measuring the average of 5 readings for the distance covered by 20 units (each consisting of one dent and one air space) in millimetres on the reed (say x mm), then metric count $= \frac{2\,000}{x}$

(Porter = $939{\cdot}8/x$)

NOTE — This method eliminates any error arising out of fraction of a unit of one dent and one air space in the method in **5.3.1**(a).

6. DESIGNATION

6.1 The reed shall be designated as follows:

Count of reed × overall width (mm) × depth of dents (mm)

Example : 12 × 940 × 3·25

7. PACKING

7.1 Each reed shall be wrapped with good quality wax paper after antirust oil has been applied to it.

7.2 A suitable number of wrapped reeds (*see* **7.1**) shall be packed with waterproof paper in bundles and/or cases as specified in the contract or order.

8. MARKING

8.1 Each reed shall be marked with reed count on end dents.

8.2 The declared porter of reed in the marking (if so required by the purchaser) shall not form the basis of any arbitration.

8.3 Each bundle or case shall be marked with the following:

a) Designation of reed (*see* **6.1**),
b) Number of reeds in bundle or case, and
c) Manufacturer's name and/or trade-mark.

8.4 ISI Certification Mark — The reeds may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

APPENDIX A

(*Clause* 0.3)

METRIC REED COUNTS CORRESPONDING TO 5 TO 24 PORTERS

[Metric Reed Count = No. of units (each consisting of one dent and one air space) per decimetre].

Porter	Metric Reed Count	Porter	Metric Reed Count
(1)	(2)	(1)	(2)
5	10·5	12¾	27·0
5¼	11·0	13	27·5
5½	11·5	13¼	28·0
5¾	12·0	13½	28·5
6	13·0	13¾	29·5
6¼	13·5	14	30·0
6½	14·0	14¼	30·5
6¾	14·5	14½	31·0
7	15·0	14¾	31·5
7¼	15·5	15	32·0
7½	16·0	15¼	32·5
7¾	16·5	15½	33·0
8	17·0	15¾	33·5
8¼	17·5	16	34·0
8½	18·0	16½	35·0
8¾	18·5	17	36·0
9	19·0	17½	37·0
9¼	19·5	18	38·5
9½	20·0	18½	39·5
9¾	20·5	19	40·5
10	21·5	19½	41·5
10¼	22·0	20	42·5
10½	22·5	20½	43·5
10¾	23·0	21	44·5
11	23·5	21½	46·0
11¼	24·0	22	47·0
11½	24·5	22½	48·0
11¾	25·0	23	49·0
12	25·5	23½	50·0
12¼	26·0	24	51·0
12½	26·5		

APPENDIX B

(*Clause* 0.4)

TABLE 2 INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	CONVERSION
Force	newton	N	1 N = 0·101 972 kgf
Energy	joule	J	1 J = 1N.m
Power	watt	W	1 W = 1J/s
Flux	weber	Wb	1 Wb = 1V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1A/V
Pressure, stress	pascal	Pa	1 Pa = 1N/m^2

TABLE 3 RECOMMENDED SI UNITS FOR TEXTILES

SL No.	CHARACTERISTIC	SI UNITS Unit	 Abbreviation	APPLICATION
(1)	(2)	(3)	(4)	(5)
1)	Length	Millimetre	mm	Fibre
		Millimetre, centimetre	mm, cm	Samples and test specimens (as appropriate)
		Metre	m	Yarns, ropes and cordages, fabrics
2)	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples and test specimen (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, durries (as appropriate)
3)	Thickness	Micrometre (micron)	µm	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4)	Linear density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filament and filament yarns
		Kilotex	ktex	Slivers, ropes and cordages
5)	Diameter	Micrometre (micron)	µm	Fibres
		Millimetre	mm	Yarns, ropes, cordages
6)	Circumference	Millimetre	mm	Ropes, cordages
7)	Threads in cloth:			Woven fabrics (as appropriate)
	Length	Number per centimetre Number per decimetre	ends/cm ends/dm	
	Width	Number per centimetre Number per decimetre	picks/cm picks/dm	
8)	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9)	Stitches in cloth:			Knitted fabrics (as appropriate)
	Length	Number per centimetre Number per decimetre	courses/cm courses/dm	
	Width	Number per centimetre Number per decimetre	wales/cm wales/dm	

(*Continued*)

TABLE 3 RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

SL No.	CHARACTERISTIC	SI UNITS		APPLICATION
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
10)	Stitch length	Millimetre	mm	Knitted fabrics Made-up fabrics
11)	Mass per unit area	Grams per square metre	g/m^2	Fabrics
12)	Mass per unit length	Grams per metre	g/m	Fabrics
13)	Twist	Turns per centimetre Turns per metre	turns/cm turns/m	Yarns, ropes (as appropriate)
14)	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15)	Breaking load	Millinewton	mN	Fibres, delicate yarns (skeins or individual)
		Newton Kilonewton	N kN	Strong yarns (individual or skeins), ropes and cordages, fabrics
16)	Breaking length	Kilometre	km	Yarns
17)	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18)	Twist factor or twist multiplier	Turns per centimetre × square root of tex Turns per metre × square root of tex	$\text{turns/cm} \times \sqrt{\text{tex}}$ $\text{turns/m} \times \sqrt{\text{tex}}$	Yarns (as appropriate)
19)	Bursting strength	Newton per square centimetre	N/cm^2	Fabrics
20)	Tear strength	Millinewton	mN	Fabrics (as appropriate)
		Newton	N	
21)	Pile height	Millimetre	mm	Carpets
22)	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	$g/m^2/mm$ pile height	Pile carpet
23)	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/ unit deformation	Fibres, yarns, strands

INDIAN STANDARDS

ON

HEALDS AND REEDS

IS :	
1190-1976	Twin wire healds for weaving (*second revision*)
1555-1974	Pitch-bound wire reeds for use in cotton looms (*second revision*)
1739-1968	Cotton healds for use in cotton looms (*first revision*)
1938-1974	Cotton cambs for use in jute looms (*first revision*)
2487-1972	Flat steel healds (excluding jacquard and leno weaving healds) (*first revision*)
2823-1972	Twin wire healds for jacquard weaving (*first revision*)
3022-1970	All metal reeds for use in cotton and silk looms (*first revision*)
3340-1976	Harness (*Dobby and jacquard*) (*first revision*)
3368-1970	Wooden heald frames for wire and flat steel healds (*first revision*)
3619-1966	Wooden staves for cotton healds
3825-1974	Inset mail wire healds for jute weaving (*first revision*)
4462-1974	Contact wire healds for jute weaving (*first revision*)
4465-1970	Metal heald frames for flat steel healds (*first revision*)
4470-1976	All metal leasing reeds for warping

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